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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/646,982	08/22/2003	Deborah A. Langer	3248	3038
7590	12/08/2005		EXAMINER	
THE LUBRIZOL CORPORATION			SHOSHO, CALLIE E	
Patent Administrator - Mail Drop 022B			ART UNIT	PAPER NUMBER
29400 Lakeland Boulevard				
Wickliffe, OH 44092-2298			1714	

DATE MAILED: 12/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)
	10/646,982	LANGER ET AL.
	Examiner Callie E. Shosho	Art Unit 1714

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
- 2a) This action is **FINAL**.                            2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) Claim(s) 1-20 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_ is/are allowed.
- 6) Claim(s) 1-20 is/are rejected.
- 7) Claim(s) \_\_\_\_ is/are objected to.
- 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on \_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.
 

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) All    b) Some \* c) None of:
    1. Certified copies of the priority documents have been received.
    2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
    3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 8/22/03 & 3/31/05
- 4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_.

**DETAILED ACTION**

**Information Disclosure Statement**

1. It is noted that “Les Lubrifiants Synthétiques: Evolution de la Lubrification” has been stricken from the IDS filed 3/31/05 given that the reference fails to comply with 37 CFR 1.98(a)(3). Specifically, applicants have not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of the reference which is not in the English language.

**Claim Objections**

2. Claim 16 objected to because of the following informalities: A symbol appears to be missing in line 5 after “<0.05”. It is suggested that “%” is inserted after “<0.05”.

**Claim Rejections - 35 USC § 112**

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) Claim 1, lines 7-8 recite “ammonia or an amino including but not limited to alkanol amine, hydroxy amine, and the like”. The scope of the claim is confusing because it is not clear

what is meant by “or the like” or what types of compounds this encompasses. Further, the scope of the claim is confusing because it is not clear what is meant by “including but not limited to” or what compounds this phrase encompasses.

Similar questions arise with respect to claims 15 and 19 which recite the same claim language as cited above.

(b) Claim 2 recites an improper Markush group. It is suggested that in line 2 after “group” and before “hydrocarbonaceous”, the phrase “comprising” is deleted and replaced with “consisting of”.

(c) Claim 9 recites “imidazoline derivative” and lignin derivative”. The scope of the claim is confusing because it is not clear what is meant by “derivative” or what imidazolines or lignins this encompasses.

(d) A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required

feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949).

(i) Claim 10 recites the broad recitation “ash content below 1.0 wt.%”, and the claim also recites “desirably less than 0.5 wt.% or more preferably less than 0.2 wt.% of sulfated ash in the lubricant” which is the narrower statement of the range/limitation.

(ii) Claim 13 recites the broad limitation “low ash as having <0.5%” and the claim also recites “preferably <0.3%, more preferably <0.2%, and most preferably <0.17% ash content” which is the narrower statement of the range/limitation.

(e) Claim 12, which depends on line 1, recites the limitation "the ashless dispersant" in line 1. There is insufficient antecedent basis for this limitation in the claim given that there is no disclosure in claim 1 of ashless dispersant. Should the dependency of claim 12 be changed from claim 1 to claim 11?

(f) Claim 12 recites “methylene-bridged sterically hindered phenols include but are not limited to “4,4-methylenebis(6-tert-butyl-o-cresol)...”. The scope of the claim is confusing because it is not clear what is meant by “include but are not limited to” or what compounds this phrase encompasses.

(g) Claim 12 recites an improper Markush group. In the last line after “hydrocinnamie”, it is suggested that “and” is deleted and replaced with a comma and after “combinations”, it is suggested that the phrase “thereof” is inserted.

(h) Claim 14 recites lubricant additives including both “anti-foam” and “anti-foam agents”. The scope of the claim is confusing because it is not clear what the difference is between these two recitations.

Similar questions arise with respect to claim 20 which recites the same claim language as cited above.

(i) Claim 14 recites “the lubricant additives do not add significant amount of ash forming metals or phosphorous compounds of the engine oil”. The scope of the claim is confusing because it is not clear what is meant by “significant”. What amounts of ash forming metals is considered significant?

(j) Claim 20 recites that “the lubricant additives add little to no ash forming metal or phosphorous compounds to the engine oil”. The scope of the claim is confusing because it is not clear what is meant by “little”. What amounts of ash would this encompass?

**Claim Rejections - 35 USC § 102**

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-7, 9-11, 13-15, and 17-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Duncan et al. (U.S. 6,748,905).

Duncan et al. disclose a combination of emulsified fuel and lubricant for a combustion engine. The emulsified fuel comprises water, hydrocarbon fuel such as gasoline, diesel fuel, ethers, organo-nitro compounds, alcohols, liquid fuels derived from vegetable or mineral sources, and mixtures of hydrocarbonaceous fuels and non-hydrocarbonaceous fuels, and emulsifier wherein the emulsifier includes product made by reacting acrylating agent with ammonia or amine wherein the acrylating agent includes fatty acids and hydrocarbon-substituted succinic acid or anhydride wherein the hydrocarbon substituent has 30-500 carbon atoms and number average molecular weight of 750-3000. The emulsifier also includes linked compound of (I) first polycarboxylic acrylating agent having hydrocarbon substituent of 6-500 carbon atoms and (II) second polycarboxylic acrylating agent having hydrocarbon substituent of up to about 500 carbon atoms wherein (I) and (II) are linked together by linking group derived from compound having 2 or more primary amino groups, 2 or more secondary amino groups, at least one primary amino group and at least one secondary amino group, at least 2 hydroxyl groups, or at least one primary or secondary amino group and at least one hydroxyl group with the acrylating agents being reacted with amine, alcohols, and hydroxy amines. There is also

disclosed emulsifier that is ionic or nonionic compound having HLB of 1-40 such as amine oxide, glycol ester, lignin, etc. The emulsifiers include mixture of reaction product of fatty acid with alkanol amine and mixture of reaction product of polyisobutene substituted succinic acid or anhydride with alkanol amine wherein the polyisobutene has number average molecular weight (Mn) of about 1500 to about 3000, the reaction product of polyisobutene substituted succinic acid or anhydride with alkylene polyamine wherein the polyisobutene has number average molecular weight (Mn) of about 750 to about 1500, and the reaction product of hydrocarbon substituted succinic acid anhydride with alkanol amine. The lubricant includes ashless dispersant in synthetic oil, mineral oil, or group II base oil. It is noted that the combination also includes additives such as viscosity modifier, rust inhibitor, and antioxidant. It is disclosed that the combination of emulsified fuel and lubricant in combustion engine results in a reduction of generation of NO<sub>x</sub> and particulate emission in the exhaust of the engine. There is also disclosed internal combustion engine comprising the above combination wherein the engine comprises equipment for recirculating its exhaust gas into the intake air supply of the engine (col.1, line 45-col.2, line 9, col.2, lines 4-9 and 47-62, col.4, lines 1-24 and 29-52, col.5, lines 48-57, col.6, lines 11-28, col.7, lines 56-58, col.9, line 62-col.10, line 14, col.12, lines 25-49, col.14, lines 46-48, 54-55, and 60-61, and col.15, lines 39-44).

In light of the above, it is clear that Duncan et al. anticipate the present claims.

7. Claims 1-3, 7, 10-11, 13-15, and 18-20 are rejected under 35 U.S.C. 102(e) as being anticipated by Harrison et al. (U.S. 6,617,396).

Harrison et al. disclose combination of (1) lubricating oil composition comprising oil of lubricating viscosity such as mineral oil, synthetic oil, and polyalpha olefin oil, lubricant that is ashless dispersant such as polyisobutetyl succinimide prepared by reacting polyisobutene having Mn of 500-2000 with maleic anhydride to produce copolymer which is then reacted with amine, and additives such as antioxidant, wear inhibitor, pour point depressants, foam inhibitors, rust inhibitors, and detergents and (2) emulsified fuel comprising water, carbonaceous fuel including hydrocarbons and natural or synthetic oils such as animal oil or vegetable oil, and emulsifier obtained by reacting hydrocarbyl substituted acrylating agent with amine. It is disclosed that the combination of (1) and (2) is used in combustion engine (col.1, lines 34-41, col.2, lines 46-56 and 63-66, col.3, lines 30-54, col.9, lines 53-54, dcol.9, line 66-col.10, line 2, col.10, lines 4-20 and 27-31, col.11, lines 14-20, col.11, line 62-col.12, line 14, and col.12, line 62-col.13, line 4). Although there is no disclosure that the use of the combination results in combustion engine results in the reduction of engine emissions, given that Harrison et al. disclose combination identical to that presently claimed, it is clear the use of the combination of lubricant and emulsified fuel would inherently result in the reduction of emissions as presently claimed.

In light of the above, it is clear that Harrison et al. anticipate the present claims.

8. Claims 18 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Rizvi et al. (U.S. 4,846,985).

Rizvi et al. disclose combination of emulsified fuel and lubricant comprising oil of lubricating viscosity such as mineral oil or synthetic oil, ashless dispersant such as carboxylic dispersant, amine dispersant, or Mannich dispersant, and antioxidant (col.1, lines 5-10, col.10,

lines 40-44, col.10, line 61-col.11, line 6, col.12, line 66-col.14, line 20, col.14, lines 51-63, col.16, lines 51-68, and col.17, lines 55-63).

In light of the above, it is clear that Rizvi et al. anticipate the present claims.

**Claim Rejections - 35 USC § 103**

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

10. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later

invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Duncan et al. (U.S. 6,748,905) in view of Marelli (U.S. 6,211,253).

The disclosure with respect to Duncan et al. in paragraph 6 above is incorporated here by reference.

The difference between Duncan et al. and the present claimed invention is the requirement in the claims of specific emulsifier.

Duncan et al. disclose the use of emulsifier that is ionic or nonionic compound having HLB of 1-40, however, there is no explicit disclosure of the specific emulsifiers required in present claim 8.

Marelli, which is draw to emulsified fuel, discloses the use of emulsifier such as sorbitan monooleate given that such emulsifier has low environmental impact, does not generate toxic by-products, and is not corrosive (col.13, lines 17-33).

In light of the motivation for using specific emulsifier disclosed by Marelli as described above, it therefore would have been obvious to one of ordinary skill in the art to use such emulsifier in the emulsified fuel of the combination of Duncan et al. in order to produce combination that has low environmental impact, does not generate toxic by-products, and is not corrosive, and thereby arrive at the claimed invention.

12. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Duncan et al. (U.S. 6,748,905) in view of Carrick et al. (U.S. 6,583,092).

The disclosure with respect to Duncan et al. in paragraph 6 above is incorporated here by reference.

The difference between Duncan et al. and the present claimed invention is the requirement in the claims of specific lubricant.

Duncan et al. disclose the use of lubricant comprising oil, ashless dispersant, and antioxidant, however, there is no disclosure of the specific types of oil, ashless dispersant, and antioxidant as presently claimed.

Carrick et al., which is drawn to lubricating oil composition, disclose the use of lubricating oil comprising base oil, ashless dispersant such as carboxylic dispersant, amine dispersant, or Mannich dispersant and antioxidant including nonylated diphenyl amine wherein the oil comprises up to 0.01% phosphorus, up to 0.25% sulfur, up to 10 ppm chlorine, and up to about 1.2% ash. The motivation for using such lubricating oil composition is to provide composition with improved high temperature deposit performance, oxidative stability, lead and copper corrosion inhibition, and improved seal compatibility (col.1, lines 11-122, col.3, lines 1 and 17-43, col.3, line 49-col.4, line 15, col.4, lines 35-51, col.15, line 1, col.17, lines 4-14, col.24, lines 5-39 and 65, and col.27, lines 60-65).

In light of the motivation for using specific oil, ashless dispersant, and antioxidant disclosed by Carrick et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such specific oil, ashless dispersant, and antioxidant in the combination of Duncan et al. in order to produce combination with improved high temperature

deposit performance, oxidative stability, lead and copper corrosion inhibition, and improved seal compatibility, and thereby arrive at the claimed invention.

13. Claims 12 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harrison et al. (U.S. 6,617,396) in view of Carrick et al. (U.S. 6,583,092).

The disclosure with respect to Harrison et al. in paragraph 7 above is incorporated here by reference.

The difference between Harrison et al. and the present claimed invention is the requirement in the claims of specific antioxidant and specific oil.

Harrison et al. disclose the use of lubricant comprising oil, ashless dispersant, and antioxidant, however, there is no disclosure of the specific types of oil and antioxidant as presently claimed.

Carrick et al., which is drawn to lubricating oil composition, disclose the use of lubricating oil comprising base oil, ashless dispersant, and antioxidant including nonylated diphenyl amine wherein the oil comprises up to 0.01% phosphorus, up to 0.25% sulfur, up to 10 ppm chlorine, and up to about 1.2% ash. The motivation for using such lubricating oil composition is to provide composition with improved high temperature deposit performance, oxidative stability, lead and copper corrosion inhibition, and improved seal compatibility (col.1, lines 11-122, col.3, lines 1 and 17-43, col.3, line 49-col.4, line 15, col.4, lines 35-51, col.15, line 1, col.17, lines 4-14, col.24, lines 5-39 and 65, and col.27, lines 60-65).

In light of the motivation for using specific oil and antioxidant disclosed by Carrick et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use

such oil and antioxidant in the combination of Harrison et al. in order to produce combination with improved high temperature deposit performance, oxidative stability, lead and copper corrosion inhibition, and improved seal compatibility, and thereby arrive at the claimed invention.

14. Claims 1-7 and 9-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/97952 in view of either WO 02/24842 or Carrick et al. (U.S. 6,583,092).

WO 01/97952 discloses emulsified fuel for a combustion engine. The emulsified fuel comprises water, diesel fuel, and emulsifier wherein the emulsifier includes (i) fuel soluble product made by reacting at least one hydrocarbyl-substituted carboxylic acid acrylating agent with ammonia or amine wherein the hydrocarbyl substituent has 50-500 carbon atoms and Mn of about 70 to about 3000, (ii) ionic or nonionic compound with HLB of 1-30 such as amine oxide, glycol ester, lignin, etc., (iii) mixture of (i) and (ii), (iv) water-soluble compound such as amine salt, ammonium salt, nitrate esters, nitro compound, alkali metal salts, and alkaline earth metal salts, (v) reaction product of polyacidic polymer with fuel soluble reaction product made by reacting at least one hydrocarbyl substituted carboxylic acid acrylating agent with ammonia, amine, or polyamine, and (vi) mixture of (ii) and (v). It is disclosed that the emulsifier comprises a mixture of the product made from the reaction of polyisobutene substituted succinic acid or anhydride with alkanol amine wherein the polyisobutene has Mn of about 1500 to about 3000, the product made from the reaction of hydrocarbon substituted succinic acid or anhydride with alkanol amine wherein the hydrocarbon substituent has about 12 to about 300 carbon atoms, and the product made from the reaction of a polyisobutene-substituted succinic acid or anhydride

with at least alkylene polyamine wherein the polyisobutene group has Mn of about 740 to about 1500. It is further disclosed that the emulsifier comprises (I) first polycarboxylic acrylating agent having hydrocarbon substituent of 20-500 carbon atoms and (II) second polycarboxylic acrylating agent having hydrocarbon substituent of up to about 500 carbon atoms wherein (I) and (II) are linked together by linking group derived from compound having 2 or more primary amino groups, 2 or more secondary amino groups, at least one amino group and at least one secondary amino group, at least 2 hydroxyl groups, or at least one primary or secondary amino group and at least one hydroxyl group with the acrylating agents being reacted with amine. There is also disclosed additives such as surfactants and rust inhibitor. There is also disclosed internal combustion engine comprising the above emulsified fuel wherein the use of the fuel results in the reduction of NO<sub>x</sub> and particulate emissions and wherein the engine comprises exhaust after-treatment device that contacts exhaust with particulate filter/trap (col.1, lines 10-14, col.3, lines 5-18, col.5, lines 5-11 and 20-28, col.6, lines 24-30, col.7, lines 19-30, col.8, lines 5-17, col.16, lines 17-20, col.19, lines 14-24, col.29, line 18-col.30, line 12, col.32, lines 2-7, col.33, lines 2-4, col.37, line 7, and col.38, lines 6-16).

The difference between WO 01/97952 and the present claimed invention is the requirement in the claims of lubricant.

WO 02/2484, which is drawn to lubricating oil composition that is mixed with fuel composition and used in combustion engine, discloses the use of lubricating oil composition comprising base oil such as mineral oil or poly-alpha-olefin oil, ashless dispersant that is Mannich dispersant or carboxylic dispersant, i.e. prepared by reacting carboxylic acid acrylating agent such as hydrocarbon substituted succinic acid or anhydride with amino compound, and

antioxidant such as 4,4-methylenebis-2,6-di-t-butyl-phenol. It is disclosed that the lubricating oil contains 5-25 ppm sulfur and less than 50 ppm other impurities. The motivation for using such lubricant is to extend the required time intervals between oil changes and reducing  $\text{NO}_x$  levels in exhaust gases (page 1, 2<sup>nd</sup> paragraph, page 4, 2<sup>nd</sup> and 7<sup>th</sup> paragraphs, paragraph bridging pages 6-7, page 7, 1<sup>st</sup> full paragraph, page 8, 1<sup>st</sup> and 4<sup>th</sup> paragraphs, page 10, 2<sup>nd</sup> paragraph, page 11, 1<sup>st</sup> and 2<sup>nd</sup> paragraphs, page 14, 1<sup>st</sup> full paragraphs, page 19, 1<sup>st</sup> full paragraph, page 22, page 23, 3<sup>rd</sup> full paragraph, and page 31).

Alternatively, Carrick et al., which is drawn to lubricating oil composition, disclose the use of lubricating oil comprising base oil such as synthetic oil Groups I-V, ashless dispersant such as carboxylic dispersant, amine dispersant, or Mannich dispersant and antioxidant including nonylated diphenyl amine wherein the oil comprises up to 0.01% phosphorus, up to 0.25% sulfur, up to 10 ppm chlorine, and up to about 1.2% ash. The motivation for using such lubricating oil composition is to provide composition with improved high temperature deposit performance, oxidative stability, lead and copper corrosion inhibition, and improved seal compatibility (col.1, lines 11-122, col.3, lines 1 and 17-43, col.3, line 49-col.4, line 15, col.4, lines 35-51, col.15, line 1, col.17, lines 4-14, col.24, lines 5-39 and 65, and col.27, lines 60-65).

In light of the motivation for using lubricant disclosed by WO 02/24842 or Carrick et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such lubricant in WO 01/97952 in order to produce combination of emulsified fuel and lubricant wherein either the combination has extended time intervals between oil changes and reduced  $\text{NO}_x$  levels in exhaust gases, or alternatively, the combination has improved high temperature deposit

performance, oxidative stability, lead and copper corrosion inhibition, and improved seal compatibility, and thereby arrive at the claimed invention.

15. Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over WO 01/97952 in view of either WO 02/24842 or Carrick et al. as applied to claims 1-7 and 9-20 above, and further in view of Marelli (U.S. 6,211,253).

The difference between WO 01/97952 in view of either WO 02/24842 or Carrick et al. and the present claimed invention is the requirement in the claims of specific emulsifier.

WO 01/97952 discloses the use of emulsifier that is ionic or nonionic compound having HLB of 1-40, however, there is no explicit disclosure of the specific emulsifiers required in present claim 8.

Marelli, which is draw to emulsified fuel, discloses the use of emulsifier such as sorbitan monooleate given that such emulsifier has low environmental impact, does not generate toxic by-products, and is not corrosive (col.13, lines 17-33).

In light of the motivation for using specific emulsifier disclosed by Marelli as described above, it therefore would have been obvious to one of ordinary skill in the art to use such emulsifier in the emulsified fuel of WO 01/97952 in order to produce combination that has low environmental impact, does not generate toxic by-products, and is not corrosive, and thereby arrive at the claimed invention.

16. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Davis et al. (U.S. 4,952,328) disclose lubricating oil composition, however, there is no disclosure of emulsified fuel as presently claimed.

WO 00/15740 discloses emulsified fuel as presently claimed, however, there is no disclosure of lubricant as presently claimed.

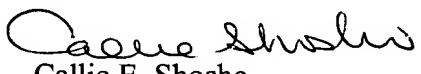
WO 96/28524 discloses emulsified fuel as presently claimed, however, there is no disclosure of lubricant as presently claimed.

WO 02/64708 discloses emulsified fuel as presently claimed, however, there is no disclosure of lubricant as presently claimed.

17. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
12/4/05